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June 21, 2007

Nancy L. Seidman
Division Director
Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Division of Consumer and Transportation Programs
One Winter Street, 10th Floor
Boston, Massachusetts 02108

VIA ELECTRONIC MAIL & OVERNIGHT DELIVERY

Re: SEMASS Resource Recovery Facility: Material Separation Plan 3 for the Diversion of Mercury – 2006 Annual Report, Revised and Final Version

Dear Ms. Seidman:

On behalf of the SEMASS Partnership, as it relates to the SEMASS Resource Recovery Facility (SEMASS), attached is the 2006 annual report detailing activities associated with Material Separation Plan “3” (MSP3) for the diversion of mercury from the potential solid waste stream.

This revised and final version of the 2006 annual report incorporates the Massachusetts Department of Environmental Protection’s comments received after initial submittal of the report on February 15th. Please note that this version is the same as previously e-mailed to you on March 14th. For your convenience in posting to the Department’s web site, we have included a comprehensive re-submittal (transmittal letter, report text, report tables, and electronic files in two formats) so that all information is in one, final version.

Should you have any questions or would like to discuss this further, please call Patti O’Hara at (508) 291-4427 or Daniel Peters at (508) 291-4436.

Sincerely,

Patti O’Hara
MSP Program Coordinator

Daniel P. Peters, P.E.
Sr. Environmental Engineer &
MSP Program Manager

Attachment

Cc: T. Klein – DEP Boston (3 Copies)

T. Michaels, IWSA



2006 Annual Report

Material Separation Plan For the Diversion of Mercury

SEMASS Resource Recovery Facility Rochester, Massachusetts

June 2007

Prepared by:

Covanta of SEMASS, L.P.
141 Cranberry Highway
West Wareham, Massachusetts 02576



Material Separation Plan – 2006 Annual Report

I. INTRODUCTION

The SEMASS Partnership is pleased to submit its sixth Material Separation Plan (MSP) Report for the SEMASS Resource Recovery Facility (SEMASS RRF) covering the 2006 calendar year. The SEMASS Partnership (SEMASS) owns and operates the SEMASS RRF in Rochester, Massachusetts. Covanta of SEMASS, L.P. is the managing general partner of SEMASS. SEMASS provides solid waste processing and disposal services for more than sixty contracted communities located primarily in southeastern Massachusetts, Cape Cod, and the Boston vicinity. The SEMASS RRF receives and processes approximately 1,000,000 tons of solid waste annually. Electricity created from the processing of solid waste at the SEMASS RRF is sufficient to power approximately 75,000 households. Between 45,000 and 50,000 tons of recyclable ferrous and non-ferrous metals are typically reclaimed each year from waste processing at the SEMASS RRF.

The MSP activities for the 2006 calendar year were implemented in accordance with Material Separation Plan 3 (MSP3). MSP3 was approved by the Department of Environmental Protection (DEP) on January 24, 2005. The document was developed to guide SEMASS' continuing effort to educate and assist the SEMASS customer base in meeting the goals of the program. These goals include: 1) the identification of products in the solid waste stream that contained significant quantities of mercury and which were frequently disposed; 2) the dissemination of instructional and outreach support to educate the public about the reasons to reduce mercury in the waste stream and how to recover mercury-containing products; 3) to aid the SEMASS customer base in implementing removal and recycling programs, while supporting or supplementing existing programs; and 4) management of MSP activities involved with the above stated goals in a cost effective manner.

II. PLAN ACTIVITIES

1.0 IWSA EDUCATION AND OUTREACH.

The Integrated Waste Services Association's (IWSA's) activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan for 2006 continued the direction set in prior years. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA Regional Program activities for 2006 consisted of the following elements:

- Radio Advertising for "Keep Mercury From Rising"

- Evaluation & Analysis of the “Keep Mercury From Rising” campaign
- Revision & Update of Website www.keepmercuryfromrising.org
- Availability of print and video materials to facilities, the public and media

Objectives.

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts’ waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

In 2006, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, “Keep Mercury from Rising”. This campaign included two waves of radio advertisements designed to reach the broadest possible audience. The campaign used targeted advertising educating the listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2006 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;
- The Program provided information and promote local recycling events;
- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

Approach.

A public survey was completed in mid-2006 measuring the effectiveness of the educational campaign “Keep Mercury From Rising.” Findings from this survey guide the development of the Regional Program. The website, www.keepmercuryfromrising.org, continues to be more user-friendly, and includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and these videos are available on the website. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

1.1 Advertising.

Analyzing past results, it was determined that the radio ads reached a greater target audience than the print advertisements in newspapers. Rather than purchasing one wave of radio advertisements, IWSA purchased two separate three-week radio buys in 2006 and advertised on radio stations that broadened our geographic outreach. Radio is a targeted medium that provides cost-efficient mass communication and built frequency of message delivery.

The first three-week radio buy was implemented May 22 through June 18, 2006. Markets targeted by the radio buy were Boston, Worcester, New Bedford, and Cape Cod. In order to maximize the dissemination of the message, IWSA purchased another three-week radio buy that aired September 11 through October 1, 2006. Based on the results of the survey conducted after the radio ad, we believe the plan was successful in increasing public awareness. By transferring the budget for print advertising to a second radio wave almost five months later, we have broadened the opportunities for a successful campaign.

1.2 Web-based Tools.

The website, www.keepmercuryfromrising.org, is user-friendly and provides additional information. The site provides navigation under the masthead and incorporates information in the following categories:

- Home – includes background on Keep Mercury From Rising and information on calling 1-866-9MERCURY for more information about safe disposal options.
- Drop-off sites – provides information on where to drop-off mercury containing items.
- Spills – provides a variety of information on actions one should take in the event of a mercury spill.
- Frequently Asked Questions (FAQs) – provides answers to five common questions.
- Video/Audio – provides the five videos developed by the facilities as well as an audio file of the advertisement that aired for six weeks in 2006.
- Links – links were proactively sought and added to this page and efforts were made to increase the number of other website that link to <http://www.keepmercuryfromrising.org>.
- Contractors - contains useful information and links for sources of mercury related information.

1.3 Print Materials.

IWSA continued to make available education brochures and print information developed in 2003. The basic “Keep Mercury From Rising” message is consistent with media formats.

1.4 Video.

The five-minute “Keep Mercury from Rising” educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the five waste-to-energy facilities for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a “B-roll” of visuals and sound is available for media covering MSP events. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

1.5 Evaluation Tool.

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field during June 2006, and consisted of 400 completes, providing a 95% confidence level. IWSA polling has measured some marked improvements in mercury awareness, responsibility, and actions – the likes of which we have not seen since 2001. For example, fish advisory mercury awareness (87%) scored its highest total in six years. Recycling participation (86%), also a six-year high, topped its 2004 high of 83 percent. Owners of thermometers were deemed most responsible for the safe disposal of a mercury thermometer – another six year high – when compared to manufacturers, waste companies, and the government. A growing number of people (41% today vs. 16% in 2001) would drive to a mercury collection center to properly dispose of a mercury product. Glass thermometer awareness reached a three-year high at 91%.

Circular wall thermostats made the most significant year-over-year jump (65% today vs. 58% in 2005) which may be due in part to the proactive initiatives of IWSA members who have spearheaded the awareness campaigns at the grassroots level. Fluorescent light bulbs also scored significantly higher mercury awareness than the 2001 levels (46% today vs. 29% in 2001). Fifty-six percent of respondents would pay \$33-\$45 to replace a \$30 circular wall thermostat with a non-mercury replacement; an additional 23% - another six year high - would pay at least double (\$60 or more) for the non-mercury replacement. In addition, doctors were the most trusted source for health and environmental information.

2.0 LOCAL EDUCATION AND OUTREACH.

2.1 Community and School Outreach.

Local education and outreach has proven to be an important component of executing the MSP. By making the residents within SEMASS' contracted communities more aware of how to properly dispose of mercury containing products and elemental mercury, and of the various Activities offered by the MSP, the greater the likelihood of success.

A bullet summary list of the various local education and outreach activities completed by SEMASS during 2006 is provided below:

- On February 16th, SEMASS sponsored a Council of SEMASS Communities (COSC) meeting with our long-term communities and provided an updated of the MSP program results and solicited input on program specifics.
- SEMASS has conducted tours of our facility during which we educate participants regarding mercury awareness.
 - The Freetown Lions Club on March 14th
 - Students from AmeriCorps attended a tour on November 7th in conjunction with Mercury Awareness Training held at SEMASS.

- SEMASS, in cooperation with Covanta Haverhill, manned a booth at the Massachusetts Municipal Association Trade Show and Conference on January 13th and 14th of 2006. This was an invaluable opportunity to meet representatives from our various communities and supply them with updated information on Covanta Energy, the MSP programs, and waste-to-energy.
- SEMASS supported the Coalition for Buzzards Bay with a \$100 donation on May 23rd to defray some of the costs to educate area residents about mercury in the waste stream and its effects on the watershed.
- SEMASS worked with and supported the Cape Cod Cooperative Extension (CCCE) and its staff regarding outreach to schools.
- SEMASS participated in the Southeast Regional Recycling Guide distributed by the *Sun Chronicle* to alert townspeople in Foxboro, Mansfield, North Attleboro, Plainville, and Wrentham about mercury in the waste stream.
- SEMASS sponsored three (3) Community Stakeholder meetings on March 2nd in Plymouth, March 17th in Taunton, and March 28th in Hyannis to receive feedback on the MSP program and use this in preparation of the new MSP4 Plan.
- During October, SEMASS attended the SWANA-Mass Chapter 4th Annual Solid Waste Conference and Trade Show held in Sturbridge, MA. Several contacts with community recycling coordinators and MADEP representatives were accomplished during this outreach session.
- On November 2nd, SEMASS hosted an appreciation dinner for the volunteers from the UMass Cape Cod Cooperative Extension for their efforts at Household Hazardous Waste collection sites and ongoing thermometer, thermostat exchanges.
- SEMASS initiated update of the outreach video titles “Keep Mercury From Rising” with current MSP Program Coordinator name and contact information appropriate to Covanta Energy.
- During the 4th Quarter, SEMASS acquired outreach materials with updated contact information and the Covanta logo for use in MSP4 outreach activities and to restock existing inventories.

2.2 Business Outreach.

In 2006, SEMASS’ outreach to businesses was principally spearheaded by our mercury “location” contractor, Pozitive Environmental Solutions, Inc. (PESI). Additional business outreach efforts were conducted by SEMASS as part of Task 3.0 activities including: Medical and Dental Facilities (see Section 3.1), the Thermostat Program (see Section 3.4), the Boatyard Marina Program (see Section 3.7), and the White Goods/Appliance Program (see Section 3.8).

Refer to Section 3.0 for a discussion of those business outreach and reclamation efforts. PESI's efforts were focused on the search and location of businesses with potentially large sources of mercury. A number of businesses were identified and mercury amounts were reclaimed under this task. A bullet list of activities is below.

- During August, SEMASS joined the Cranberry Country Chamber of Commerce that serves the towns of Bridgewater, Carver, Halifax, Lakeville, Middleboro, Plympton, Raynham, Rochester, and Wareham. This will serve SEMASS to promote the new business outreach and business reimbursement tasks associated with the new MSP4 Plan.
- On December 5th, SEMASS and Complete Recycling Solutions reclaimed twenty-five (25) pounds of elemental mercury from Technology Management Corporation of Avon. Technology Management Corporation is a metals scrap dealer.
- On December 13th, SEMASS and Complete Recycling Solutions reclaimed a number of mercury-containing devices from Reed & Barton, a manufacturer that conducts plating operations and manufactures silverware in Taunton. A number of fluorescent bulbs were reclaimed along with nine (9) pounds of elemental mercury, eighteen (18) mercury switches, and four (4) thermometers.
- On December 22nd, SEMASS and Complete Recycling Solutions reclaimed the estimated equivalent of forty (40) pounds of elemental mercury from the Charles Jamieson Company of Middleborough. This company is a trucking firm and this material consisted of several drums of soil, residual mercury, and cleanup debris that were removed during an earlier truck spill incident. The drums of material were taken to CRS in Fall River for thermal processing and separation of the mercury from the remaining solid waste.
- During the 4th Quarter, SEMASS developed and printed a number of flyers, handouts and documents with updated contact information and the Covanta logo to assist with business outreach under MSP4.

2.3 Mercury Handling and Awareness Training.

Our mercury awareness, handling training contractor, HAZMATEAM, Inc. of Hudson, NH, provided multiple training sessions for SEMASS communities at various locations during 2006. Each training session was approximately 2 ½ hours in duration and covered various aspects of mercury including its physical characteristics, health effects, handling and storage, spill management, and its effect on the environment. The training was available to anyone from our SEMASS communities such as school representatives, DPW personnel, and emergency response personnel. Mailers were sent out before each of the mercury awareness training sessions (on March 8th and October 12th to promote interest and attendance. SEMASS also provided additional funding to HAZMATEAM to revise, improve, and update the existing mercury handling and awareness training.

HAZMATEAM, Inc. completed four (4) training sessions for SEMASS communities. A total of fifty-seven (57) persons from multiple communities and organizations attended and completed these training sessions.

- April 4th at the Courtyard Marriott in Stoughton followed by a tour of the Onyx (i.e. now Veolia) Environmental Services facility in Stoughton. Veolia staff demonstrated their processes for receipt, handling, reclamation and recycling of universal and mercury-containing wastes.
- April 5th at Complete Recycling Solutions (CRS) in Fall River, followed by a tour of their facility. CRS staff demonstrated their processes for receipt, handling, reclamation and recycling of universal and mercury-containing wastes.
- October 31st at the Quincy Parks and Recreation building in Quincy.
- November 7th at the SEMASS Resource Recovery Facility in Rochester followed by a tour of our facility.

Follow-up letters, information and materials were sent to all communities who attended training sessions including: mercury spill kits, a list of spill mitigation contractors and contact information, improved mercury hazard communication signage, and methods to determine if a spill had occurred in a community's universal waste shed.

3.0 MERCURY REDUCTION / RECYCLING PROGRAMS.

3.1 Medical and Dental Facilities.

Task 3.1 activities during 2006 focused primarily on the collection and recycling of mercury-containing sphygmomanometers (blood pressure cuffs/monitors) with replacement of mercury-cuffs with non-mercury units. The following activities were conducted in 2006 for identification, replacement, and recycling of sphygmomanometers from medical sources.

- **Town of Attleboro.** SEMASS worked closely with biomedical staff at Sturdy Memorial Hospital on July 6th to reclaim and recycle forty-two (42) mercury-containing sphygmomanometers, and fifteen (15) mercury fever thermometers. SEMASS also provided funding earlier on May 23rd to purchase the equivalent number of non-mercury aneroid blood pressure units to replace the reclaimed mercury ones.
- **City of Quincy.** SEMASS worked closely with operations staff at the Manet Community Health Centers in Quincy, MADEP, and the Northeast Region 1 Municipal Assistance Coordinator to reclaim and recycle twenty-eight (28) mercury-containing sphygmomanometers on November 21st. SEMASS also provided funding and furnished twenty-six (26) fixed non-mercury units plus four (4) mobile blood pressure units to Manet Community Health Centers on October 11th.

- During December, SEMASS purchased a supply of sphygmomanometers for use in ongoing medical or school clean-out activities going forward into MSP4.

Due to intensive outreach to dentists and dental facilities in 2005, no further outreach was conducted for this area during 2006 and SEMASS received no further inquiries for MSP support. The Department's own program of dental amalgam wastewater filters appears to be working well. Dental amalgams, since they are an amalgam of several metals (mercury, silver, copper) require specialized processing to reclaim these constituent metals safely. SEMASS' reclamation contractors (Complete Recycling Solutions, Onxy/Veolia) do not have this processing capability at their Massachusetts locations.

SEMASS will continue to follow-up with any elemental mercury inquiries from dentists, orthodontists or other dental offices going forward under this task.

3.2 Thermometer Exchange Programs.

SEMASS continued to offer the communities opportunities for exchanging glass fever thermometers containing mercury with digital thermometers that were purchased by SEMASS. Although activity on this task continues to decrease, thermometers remain the most commonly recognized mercury-containing device. To inform the SEMASS customers of this opportunity, various communication methods were used throughout the year including presentations at Council of SEMASS Communities (COSC) meetings, training sessions, informational mailings, telephone calls and personal meetings with community representatives/officials. SEMASS used these communication tools to advise and provide its customers with the necessary information to assist them in implementing a thermometer exchange program.

The communities employed various types of mercury thermometer collection and exchange events throughout the year. Some of these events occurred on a single day, while others continue to occur on an ongoing basis. Household hazardous waste collection days were also used by the communities as an opportunity for collecting mercury thermometers and exchanging them for digital thermometers.

Several of the communities also held thermometer exchange events on an ongoing basis at specified location(s) within a community. These locations varied, but were typically at the Boards of Health offices, Town Halls, transfer stations and/or Department of Public Works yards. Communities that provided this type of thermometer exchange opportunity gave the local residents more opportunity to participate.

A bullet list of some of the various thermometer exchange events is detailed below:

- SEMASS supported the Town of Wrentham's ongoing mercury exchange events during January by providing funding for local advertisement in the Attleboro *Sun Chronicle*. This advertisement was in the special *Reduce, Reuse, Recycle* supplement that was distributed to five regional towns including Wrentham.

- On April 4th, SEMASS provided one-hundred digital, non-mercury fever thermometers to the Town of Sharon for ongoing thermometer exchange events.
- SEMASS supported the Cape Cod Cooperative Extension's (CCCE) efforts at ongoing thermometer exchange events on Cape Cod.
 - On June 28th SEMASS provided one hundred (100) non-mercury fever thermometers and one hundred (100) Dunkin' DonutsTM coupons.
 - On September 25th SEMASS provided 250 non-mercury fever thermometers.
- On November 16th, SEMASS provided to the Carver Board of Health fifty (50) non-mercury fever thermometers as part of the on-going exchange at the Town Hall.
- On November 17th, SEMASS issued a mass-mailing to one-hundred eight-four (184) persons on our master MSP contact list describing opportunities associated with the program including, collection buckets, spill kits, non-mercury thermometers, and incentive Dunkin' DonutsTM coupons.
- On November 27th SEMASS provided the town of Berkley with five hundred (500) non mercury fever thermometers for their thermometer exchange.
- On November 29th the town of Acushnet was provided fifty (50) non-mercury fever thermometers.
- On December 11th the town of Provincetown was provided one hundred (100) non-mercury fever thermometers as part of an ongoing exchange at the town hall.
- During March and December, SEMASS purchased additional quantities of non-mercury thermometers to restock existing inventory.

3.3 Community Reimbursement / Household Hazardous Product Event Support

SEMASS allocated funds to reimburse communities for the cost of contracting with a vendor to properly dispose or recycle mercury containing devices that they collected through various initiatives such as thermometer exchanges and household hazardous product days (HHP days). In addition to reimbursing the cost to reclaim these devices, SEMASS also supported the community household hazardous product or hazardous waste collection days, with various methods such as advertisements, brochures, etc. in an effort to promote their collection.

SEMASS conducted mass-mailings for mercury reimbursement to our list of community contacts in January and July. Additional reminders were provided to the representatives at COSC meetings. In these mailings, each community received a cover letter explaining the process and a reimbursement form to be completed prior to receipt of reimbursement for their mercury disposal/recycling costs.

- SEMASS issued reimbursement letter requests to contact persons of our sixty-two (62) long-term customers/ municipalities during two periods:
 - 1st Half 2006 Reimbursement. On January 17th, a letter request was issued to one-hundred and seventy-two (172) contact persons. This letter offered reimbursement for MSP-associated costs for the period of July 1st – December 31st, 2005.
 - 2nd Half 2006 Reimbursement. On July 14th, a letter request was issued to one-hundred and sixty-six (166) contact persons. This letter offered reimbursement for MSP-associated costs for the period of January 1st – June 30th, 2006.
- SEMASS issued reimbursement payments to the following numbers of municipalities/long-term customers. Qualified expenses (mercury-related items) were reimbursed at 100% of costs.
 - 1st Half 2006 Reimbursement. Assistance was provided to thirty (30) communities in 2006 with an overall participation rate of 48%. The same period in 2005 was 34%.
 - 2nd Half 2006 Reimbursement. Assistance was provided to nineteen (19) communities in 2006 with an overall participation rate of 31%. The same period in 2005 was 45%.
- The overall community reimbursement town participation rate for 2006 was 55% with 34 communities out of 62 participating in at least one of the reimbursement periods. For 2005 the participation rate was 53%, so this task remained relatively steady.
- SEMASS conducted ongoing editing of our database of community contact person. A formal mass-mailing was issued to our MSP contact list on October 2nd as a further attempt to update and maintain the most current contact list of names, numbers, addresses, etc.

Below are some highlights of SEMASS efforts to support community HHP days:

- SEMASS provided funding support during February, May, and October to the Cape Cod Cooperative Extension for HHP advertisement of HHP events for all Cape Cod and Martha's Vineyard SEMASS communities (sixteen communities total) and reclamation of mercury devices. These HHP events ran throughout spring, summer and fall 2006.
- SEMASS provided funding support during May and October to the South Shore Recycling Cooperative (SSRC) for costs associated with printing of household hazardous waste event flyers. This provided HHP event support to thirteen (13) SEMASS communities for HHP events throughout spring, summer, and fall 2006.

- In conjunction with Task 3.2, SEMASS provided non-mercury thermometers, supplies (mercury awareness flyers, spills kits, buckets, etc.) and funding support to the Carver-Marion-Wareham Regional Refuse Disposal District for support of their community HHP and Thermometer Exchange Activities event held on May 6th. This event provided HHP recycling opportunities for residents of Carver, Marion, Wareham, and Rochester.

Much of the mercury-containing products reclaimed as part of Task 3.3 consisted of large volumes of various fluorescent bulbs including straight bulbs, U-tubes, circular lamps, compact fluorescents and HID lamps. Several large sources of mercury, however, were reclaimed during the Household Hazardous Product (HHP) events and some of these are noted below: Substantial credit should go to the Cape Cod Cooperative Extension, their volunteers, and the various Town personnel who helped sponsor these events.

- **Town of Barnstable.** Reclamation of 6.9 pounds of elemental mercury, one-hundred eighteen (118) mercury-thermostats and nineteen (19) industrial switches.
- **Town of Berkley.** Reclamation of 6 pounds of elemental mercury and one (1) large barometer.
- **Town of Bourne.** Reclamation of 17.7 pounds of elemental mercury, ninety-nine (99) mercury thermostats, and five-hundred and six (506) electrical/industrial switches.
- **Town of Carver.** Reclamation of three (3) mercury-containing sphygmomanometers, and six (6) mercury thermostats.
- **Town of Dennis.** Reclamation of 61.6 pounds of elemental mercury, ninety (90) mercury thermostats, three (3) electrical switches and two (2) float switches.
- **Town of Eastham.** Reclamation of twenty-four (24) mercury-containing sphygmomanometers and 4.6 pounds of elemental mercury.
- **Town of Falmouth.** Reclamation of six (6) mercury-containing sphygmomanometers, 7.1 pounds of elemental mercury, three-hundred and twenty-four (324) mercury thermostats, and seventeen (17) industrial switches.
- **Town of Freetown.** Reclamation of 13.0 pounds of elemental mercury.
- **Town of Harwich.** Reclamation of sixty-four (64) mercury thermostats and five (5) electrical switches.
- **Town of Mashpee.** Reclamation of seventy-five (75) mercury thermostats, and sixty-two (62) electrical/industrial switches.
- **Town of Middleborough.** Reclamation of 141.0 pounds of elemental mercury from the Middleborough Water Department on July 20th. This involved removing mercury from three *Type-M* Venturi water meters (circa 1920's) that were no longer in service. Also reclaimed were thirteen (13) mercury thermostats.
- **Town of Orleans.** Reclamation of forty-three (43) mercury thermostats and 4.0 pounds of elemental mercury.
- **Town of Sandwich.** Reclamation of sixty-eight (68) mercury thermostats and five-hundred twenty-nine (529) electrical/industrial switches.
- **Town of West Bridgewater.** Reclamation of 8.0 pounds of elemental mercury.
- **Town of Yarmouth.** Reclamation of three (3) mercury-containing sphygmomanometers, one-hundred twenty-three (123) mercury thermostats, and three (3) electrical switches.

- **Carver-Marion-Wareham Regional Refuse Disposal District.** Reclamation of 14.0 pounds of elemental mercury.

3.4 Commercial and Residential Thermostat Program.

This task concentrated on continuing efforts for the collection and reclamation of residential and commercial thermostats through the use of existing programs first established in MSP2. Some details of these efforts are outlined below:

- On May 23rd, SEMASS met with the Product Stewardship Institute (PSI) of Boston, MA, representatives of Honeywell, Inc. representing the Thermostat Recycling Corporation (TRC), and the Massachusetts DEP. The purpose was discussion of ways to cooperate on mercury thermostat recycling/reclamation. As a result, SEMASS will pursue joint efforts with TRC to identify, reclaim, and recycle mercury-containing thermostats and to furnish non-mercury units during MSP4.
- The Cape Cod Cooperative Extension, their associated volunteer staff, and Town personnel led multiple, impressive mercury reclamation efforts with various HVAC suppliers on Cape Cod. SEMASS provided support in the form of supplies, materials and reimbursement of 100% of the reclamation costs. CCCE's efforts included the following:
 - **Town of Barnstable.** Four different HVAC firms
 - Bourque HVAC. Two separate collections on March 30th and September 14th that reclaimed: four (4) glass fever thermometers, two-hundred, forty-eight (248) mercury thermostats, and two (2) electrical switches.
 - Soares. Reclamation on April 20th of twenty-three (23) mercury thermostats plus 1.75 pounds of elemental mercury.
 - Robies HVAC. Reclamation on July 6th of forty-five (45) mercury thermostats.
 - F.W. Webb. Reclamation on December 1st of two (2) mercury thermostats.
 - **Town of Falmouth.** Two different HVAC firms
 - Bayside Mechanical. Reclamation on September 29th of thirty (30) mercury thermostats plus 0.1 pounds of elemental mercury.
 - Bennett Plumbing and Heating. Reclamation on December 7th of fifty (50) mercury thermostats.
 - **Town of Sandwich.** Two different HVAC firms
 - All Gas Heating. Reclamation on November 21st of forty-five (45) mercury thermostats plus three (3) industrial switches.
 - Ready Rooter. Reclamation on December 7th of nine (9) mercury thermostats.

- **Town of Yarmouth.** Two different HVAC firms
 - Rusty's Plumbing. Reclamation on October 23rd of one-hundred thirty-three (133) mercury thermostats and 1.7 pounds of elemental mercury.
 - South Shore HVAC. Reclamation on October 23rd of one-hundred fifty-seven (157) mercury thermostats, and three (3) industrial switches.
- On September 14th, SEMASS provided plastic buckets, supplies, and contact information to the following Heating, Ventilation and Air Conditioning (HVAC) companies in Stoughton:
 - Commair HVAC
 - J.C. Higgins Company
 - Balco HVAC
 - Emcor Services, Northeast
- On August 14th, SEMASS and Complete Recycling Solutions reclaimed nine (9) pounds of elemental mercury from Charlie Shaugnessy, an independent HVAC and electrical contractor from Bourne.
- In August, SEMASS provided plastic bucket(s) and collection supplies to Victory Heating and Air Conditioning in Bellingham for reclamation of mercury containing devices, primarily commercial and residential thermostats. On November 15th, SEMASS and Complete Recycling Solutions reclaimed one-hundred and forty-eight (148) mercury-containing thermostats.
- On December 1st, SEMASS and Complete Recycling Solutions reclaimed the following mercury-devices from Advance Air & Heating Co., East Freetown: fifty-four (54) mercury-containing thermostats, two (2) mercury-containing gas pressure regulators (assumed to be equivalent to a mercury switch) and one (1) mercury-containing thermometer.
- During December, SEMASS purchased a significant supply of digital, non-mercury thermostats (approximately 250) to build up inventory in preparation for MSP4 activities and expanded municipal thermostat exchanges.

3.5 School Clean-Outs.

SEMASS, in conjunction with the Cape Cod Cooperative Extension, conducted a number of school cleanouts and outreach activities during 2006. The demand for these cleanout activities has slackened, so further outreach efforts (site visits) are needed to urge schools to participate in this activity. Under MSP4, SEMASS hopes to team school clean-outs with Municipal thermostat activities to revitalize this task. Activities completed during 2006 include the following.

- Barnstable High School, Barnstable. Mercury amounts reclaimed included eighty-four (84) glass fever thermometers, one (1) lab thermometer, and 1 pound of elemental mercury.
- Cape Cod Academy (Osterville), Barnstable. Mercury amounts reclaimed included nine (9) mercury thermostats and 0.10 pounds of elemental mercury.
- Bourne Middle School, Bourne. Mercury amounts reclaimed included thirty (30) glass fever thermometers, nineteen (19) lab thermometer, two (2) sphygmomanometers, one-hundred and one (101) thermostats, and ten (10) mercury switches.
- Blue Hills Regional Technical School, Canton. Mercury amounts reclaimed included thirty-nine (39) mercury thermostats.
- Nauset Regional High School, Eastham. Mercury amounts reclaimed included fifty-five (55) lab thermometers, four (4) laboratory barometers, and 7.75 pounds of elemental mercury.
- Falmouth Academy, Falmouth. Mercury was reclaimed from one (1) laboratory barometer.
- Waltham Public Schools, Waltham. Mercury amounts reclaimed included forty (40) lab thermometers.
- On December 14th, SEMASS issued a mass-mailing to eighty-eight (88) public and private elementary, middle, and high schools in our regional area to further promote interest in this Plan activity going forward into MSP4.

3.6 Universal Waste Sheds.

SEMASS placed no universal waste sheds during 2006 (Note: costs from a shed placed during December 2005 carried over into the 2006 fiscal year and are reflected in this annual report). Effort on this task primarily involved improvement of signage (town and safety signage) on existing sheds which was periodically requested by communities during the year. Additional funding and effort was spent on purchase and distribution of additional spill kits. Distribution of signage and spill kits typically occurred in conjunction with the mercury handling and awareness training sessions detailed under Task 2.3.

3.7 Boatyards, Marinas, & Marine Facilities.

In accordance with the MSP3 plan, outreach efforts continued to target boatyards, marinas and other marine repair and/or maintenance facilities for mercury-containing products. Bilge pumps that are commonly used in boats often have mercury-containing switches that are frequently

replaced when normal routine maintenance is performed on the boats. Furthermore, because many of SEMASS' contracted communities are located on the coast, this task represents a potential source of mercury that could be captured for reclamation.

Activity on this task was fairly intensive during the 2005 calendar year. As a result of this, however, demand for this task activity was minimal during 2006. Buckets and literature are present at the same locations noted in the 2005 Annual Report and are slowly building up inventories of mercury devices. Completed activities during the year include the following.

- On February 10th, SEMASS and Complete Recycling Solutions responded to a request from Burr Brothers Marina in Marion and reclaimed a mercury-containing marine barometer that had been broken but contained in a bucket.

3.8 Appliance / White Good Recycling.

During October 2005, SEMASS issued a mass-mailing request to our list of Town Contacts offering the services of Interstate Refrigerant Recovery, Inc. (IRRI) to locate and remove mercury switches from appliances and white goods. To-date, there has been no interest in this task from our long-term municipalities/customers. It is our understanding that mercury switches are primarily contained in older white goods and are not as frequently found in newer appliances. As a result, this task has been eliminated in the MSP4 plan beginning January 2007.

4.0 PROGRAM ADMINISTRATION.

Administration of the MSP program is conducted as part of Task 4.0 and includes implementation of the following activities on an on-going basis:

- General communications with our community members or regional recycling organizations
- Communications with the MADEP or other regulatory personnel
- Internal progress calls and/or meetings with the program team members and management
- Program subcontractor & contractor (i.e. PESI, HAZMATEAM, Onyx, CRS, etc.) management, discussion, coordination, meetings, contracting & payment/account processing
- Tracking program budget and expenditures
- Tracking reclaimed/recycled quantities of mercury, and mercury-containing devices
- Maintenance of program files & records

Further administrative efforts during 2006 also included the following activities:

- Preparation, review, and submittal of the 2005 Annual Program Report during February
- Group discussions during March, April, and June with IWSA and the other WTE Plants (Covanta Haverhill, Wheelabrator) with regards to:

- Task 1.1 radio advertisement campaigns
 - Task 1.5 Survey Results (Evaluation Tool)
 - New MSP4 Plan activities
- Interviewing and hiring a new MSP Coordinator (Patti O'Hara) who replaced SEMASS' prior coordinator (Joanne Qamoos) who departed the firm in March.
 - As part of Task 2.1, SEMASS sponsored three (3) outreach meetings during March with community Stakeholders to receive input/feedback for the new MSP4 Plan. SEMASS provided a summary of stakeholder feedback on July 20th in a mass-mailing to the MSP contact list
 - SEMASS drafted and finalized the new MSP4 Plan covering mercury-related activities for the 2-year period of January 2007 through December 2008. Activities included:
 - SEMASS met with MADEP on April 24th regarding MSP4 planning
 - SEMASS prepared and submitted the draft Plan on July 7th to MADEP.
 - MADEP draft approval of the MSP4 Plan was received on September 13th and the Plan was released for a 30-day Public Comment period through October 16th.
 - MADEP provided public comment feedback on November 22nd and SEMASS revised and resubmitted the MSP4 Plan on December 8th.
 - MADEP approved the revised Plan on December 15th, 2006.

III. MERCURY RECOVERY RESULTS

The type and quantity of mercury items (elemental or products) that were diverted from the waste stream in 2006 are provided in Table 1 and are broken down by SEMASS community versus device type. The total amount of mercury reclaimed during the 2006 was estimated at an equivalent of 482 pounds of elemental mercury. This quantity was determined using the revised reporting formats and criteria for estimating mercury amounts developed during 2004 in conjunction with MADEP, IWSA, and the WTE firms. These criteria include the use of unit mercury weights by type of device that were developed by NEWMOA and that are incorporated into SEMASS' MSP3 Plan.

The breakdown of mercury devices by Program Task is shown on Table 2. Please note that totals for Task 3.2 Thermometer Exchange events are typically lumped in with Task 3.3 since most communities combine reporting of these tasks. The most productive tasks appear to be Task 3.1 Medical and Dental Facilities, Task 3.2 Thermometer Exchange Programs, Task 3.3 Community Reimbursement and HHW Support and Task 3.4 Commercial/Residential Thermostats. The least productive tasks were Task 3.5 School Cleanouts, Task 3.7 Boatyards, Marinas and Marine Facilities and Task 3.8 Appliance/White Good Recycling.

IV. PLAN EXPENDITURES

SEMASS expenditures on the 2006 MSP program are detailed by task activity on Table 3. Expenditures for 2006 totaled \$287,037 broken down by major task as follows:

- Task 1.0 IWSA Education and Outreach: \$ 50,000
- Task 2.0 Local Education and Outreach: \$ 71,878
- Task 3.0 Mercury Reduction/Recycling Programs: \$ 119,202
- Task 4.0 Program Administration: \$ 45,957

As detailed in Table 3, MSP expenditures were comparable to budget for Tasks 1.0 and 2.0. Expenditures for Tasks 3.0 and 4.0 were slightly less than budgeted. This was due to lack of demand for a number of the Task 3.0 activities (school cleanouts, boatyards, waste sheds) as well as the transition between MSP Coordinators which left a portion of the 2006 year covered by the SEMASS Environmental Department.

SUPPORTING TABLES